THE UNIVERSITY OF ALBERTA

STAFF UTILIZATION IN ALBERTA SECONDARY SCHOOLS

by

NICHOLAS HOLOWACH

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENT

FOR THE DEGREE OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Staff Utilization in Alberta Secondary Schools" submitted by Nicholas Holowach in partial fulfilment of the requirements for the degree of Master of Education.

ABSTRACT

The aim of the study was to survey practices in public secondary schools in Alberta and compile information on class sizes and teacher instruction loads. An added feature of the study was to determine to what extent class sizes and teacher instruction loads varied with the size of school as measured by pupil enrollment.

A random sample consisting of approximately one-sixth of all public secondary schools in Alberta school divisions and counties was used for the survey. The sample of schools used was stratified on the basis of school enrollments and was divided into four enrollment categories; these were 10-49, 50-99, 100-150 and 150+.

The Form A school registration forms which are kept by the Examinations Branch, Department of Education were the original source of data for each school. For each school in the sample the necessary information was transferred onto Information Sheets and subsequently, in revised form, onto Data Sheets. The Data Sheets provided the basis for the findings of the study.

The average class sizes were found to be 23.5, 20.0, 17.2, and 12.9 in schools in enrollment categories of 150+, 100-150, 50-99, and 10-49, respectively. Class sizes were found to decrease generally from Grades 10 to 12 and were found to be larger in the Eng-Fr-SS area than in the Math-Sc and Others subject areas.

The median instruction time per teacher was found to be 22 hours per week. A comparison by enrollment categories indicated

that teachers in the lowest enrollment category (10-49) spent most time in instruction while those in the 100-150 category spent least time in instruction. Medians of 22, 21, 22, and 23 1/3 hours per week were found for teachers in enrollment categories of 150+, 100-150, 50-99, and 10-49, respectively.

For means of comparison the averages for class size and instruction time per teacher in each enrollment category were multiplied to give a measure of teacher output in terms of pupil-hours. Average teacher outputs of 517, 420, 378, and 301 pupil-hours in schools in enrollment categories of 150+, 100-150, 50-99, and 10-49, respectively, illustrate the relationship between teacher output and size of school as based on pupil enrollment.

The feature of "smallness" appears to relate directly to the over-all nature of the teaching tasks in schools having small enrollments. This study indicates that rather basic differences are found with respect to class sizes, instruction loads and course offerings.

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CHAPTER I

STATEMENT OF THE PROBLEM AND SCOPE OF THE STUDY

I. INTRODUCTION

Many changes have taken place, and others continue to take place, in the education system in Alberta. Increased enrollments, larger school plants and demands for a more diversified and extensive educational program have created new and challenging problems in school administration. These demands and resulting increases in education costs have caused more emphasis to be placed on efficiency of school operations and on quality of education provided.

The teacher is a key figure in the operation of schools and it is little wonder, therefore, that the combination of expanding school services and higher rates of pay have caused teachers' salaries to be a major segment of the total educational bill. Teachers' salaries often give rise to disputes and become controversial issues at local government levels. Justification of teachers' pay, in the writer's opinion, is dependent upon the kind and amount of service provided. Of paramount importance, then, are the working conditions of the teacher.

The size of classes that the teacher conducts and the total time spent in actual classroom instruction jointly give a measure of the amount of service provided. These two factors are crucial in determining the over-all teacher load and, therefore, output of a

teacher. Variations in class sizes and total teaching times per teacher from one type of school to another may result in corresponding variations in teacher output.

The two major determinants of teacher load--class size and time spent in actual classroom instruction--will be the focus of this study. Presently little detailed information is available with regard to class sizes for instruction purposes, particularly at the secondary school level. Information about teacher outputs for various types of schools, it is hoped, might point the way towards facilitating and maximizing professional services of school staffs.

II. THE PROBLEM

Statement of the problem

The purpose of this study is to survey school practices in Alberta secondary schools regarding instruction times and class sizes. More specific objectives are as follows:

Major objectives

1. (a) To investigate and compare class sizes for instruction purposes in schools from different enrollment categories.

(b) To determine whether class sizes vary with (i) grades and (ii) with subject areas.

2. (a) To investigate and compare instruction times of teachers in schools from different enrollment categories.

(b) To determine whether teacher instruction time varies with subject areas of specialization.

3. To compare teacher outputs in schools from different enrollment categories.

Minor objectives

4. To determine for each enrollment category the average number of credits enrolled-in per pupil registered in each of grade 10, 11 and 12.

5. To determine the average number of credits offered in schools in the various enrollment categories.

Significance of the study

With emphasis on efficient utilization of staff and a simultaneous demand for both diversified and high quality education, school administrators are faced with tasks which involve making crucial decisions. Decisions centered around optimum class size and optimum teacher load are by no means easily made, nor are they made with any degree of certainty. In making such decisions one generally must rely upon his previous experiences and upon available information. However, research has this to say:

> The relation of class size to quality of instruction is a topic about which there is a great range and volume of opinion. Some opinion is based on experimental evidence, most of it is not. Again, there is little common or consistent agreement in Canada, as in other countries, as to what should be considered a small, average, or a large class.[1]

No doubt current practices vary amongst school divisions and counties and amongst schools within these. These variations may in

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[1]Collins, C. P., "Teaching Load - A Survey of Literature," Canadian Research Digest, No. 8, (Fall, 1960), p. 171.

some cases be a result of necessity while in other cases, perhaps, a result of local administrative decisions.

> ... in Canada the main determinant of class size appears to be closely related to grant and building regulations enunciated by the provincial government. While it might be said that these regulations also rest in tradition and are a reflection of opinion of the provincial community, it might be equally true to say that they could be the expression of opinion of a small group of educational administrators. There are no research studies in Canada to support or challenge either hypothesis.[2]

It is the writer's opinion that a careful examination and analysis of current practices may point the way towards certain desirable goals and may bring about corresponding changes and therefore improvements.

Regarding the two major determinants of teacher load--class size and instruction time--there is some literature available dealing with instruction time of teachers but little dealing with class size for instruction purposes. However, the following view has been expressed:

> ... Practices point to the firmly held opinion, current throughout Canada and more or less commonly accepted by teachers, administrators and parents, that there is a direct relationship between quality of instruction and teaching load, and that the main, if not the sole, determinant of teaching load is class size.[3]

Most studies dealing with class size have been based on the number of students per class as indicated on the teachers' registers, Particularly in secondary school, because of departmentalization, this

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[2] Ibid., p. 172.

[3] Ibid., p. 173.

measure of class size is not necessarily an indication of the size of classes for instruction purposes. Black[4] reported that in the secondary grades only about seventy per cent of the teachers have registers. This indicates that the difference between register class size and instructional class size could be a sizable one. Likewise, reliable information regarding teacher instructional loads at the various grade levels is scanty.

It appears that proper, and perhaps improved, staff utilization practices could provide a means of maximizing professional services of teachers. Instruction load, as one aspect of working conditions, could directly affect the over-all workload of a teacher or a staff of teachers. Information about current practices, it is hoped, would guide school administrators in planning and managing schools for optimum operation, for "there are few educational areas where decisions made by administrators have such far-reaching effects on finance, staff utilization, classroom accommodation, and the whole learning situation, as those made in relation to teaching load."[5]

The recent report on The Small High School in Alberta[6] has created renewed interest and concern in the future of the small high school. The adequate staffing of these institutions has always been

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[4]Black, D. B., "Trends in Class Size in Alberta Schools (1960-1962)," Research Monograph Number 6 (The Alberta Teachers' Association, Barnett House, Edmonton, April, 1963), p. 13.

[5]Collins, op. cit., p. 181.

[6]Downey, L. W., The Small High School in Alberta. The Alberta School Trustees' Association, Edmonton, 1965.

one of the more difficult tasks in their operation. The greater emphasis on diversification of programs, on specialization in subject areas, and on equality of educational opportunity may increase this problem of staffing small high schools. The still prevalent shortage of properly qualified teachers implies but one short-range solution, namely, the maximum use of the existing teaching force. This implies improving the working conditions of teachers to attract and retain them in the profession and to enable them to perform efficiently and effectively. Two of the more crucial factors to be considered would appear to be instruction load and class size. It appears that most of the recommendations made by Downey[7] in his report were based directly or indirectly on making better use of available and somewhat limited teaching talent.

It is the intention of this study to add to the existing information and understanding of the internal operations of secondary schools in Alberta.

Related literature

In the following quotation Collins summarizes previous research findings in the area of class size and in so doing implies that optimum class size is dependent upon the objectives of education:

> Most of the research studies conducted in the United States and Great Britain between 1900 and 1940 used pupil achievement in content subjects as the criterion for establishing a relationship between effective instruction and class size. The nature of the findings and inferences was in marked contrast to the trends in

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[7] Ibid.

> opinion for (although there appears to be some conflict) the results of most of the studies would indicate that, under typical conditions, class cize by itself appears to be unimportant as a factor in assessing effectiveness of instruction. On the other hand, findings from studies during the past ten or fifteen years using desirable classroom conditions as a criterion have favored small classes--with some words of caution.[8]

Collins also concluded that particularly in the kindergarten and elementary grades support for small classes rests on the basis of desirable classroom conditions and on the personal and social development of the students. However in the secondary grades, he reports, on the basis of academic achievement, research findings lend support to larger classes.

Teachers' attempts at recognizing and providing for individual differences have no doubt had a great influence in reducing class sizes. It would seem to follow that as the principal needs of students, and therefore the objectives of education, change with the grade levels corresponding changes in class size would be appropriate. In this connection Collins reports that "While evidence is scanty, the greater maturity of pupils and the more specific objectives in high school and college suggest that classes of widely varying sizes might appropriately be provided at these levels".[9]

Collins[10] reports that in 1920 the average class size in Canada

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[8]Collins, op. cit., p. 173.

[9]Ibid., p. 180.

[10]Ibid., p. 171.

was 32.8 while in 1960 it was 26.3. Dr. D. B. Black[11] in his study on class size in Alberta, based on register enrollments in September in the period 1960 to 1962 found that median class size increased from 27.76 pupils to 29.00 pupils. His findings indicated that junior and senior high schools have slightly higher class sizes than elementary schools although the proportion of teachers with registers in these schools is about a quarter less than in the elementary schools. In slight contrast are the findings of a study[12] recently carried out by the research division of the National Education Association involving some 3,400 teachers which found the average number of pupils in classes taught to be 29.1 in elementary schools and 26.6 in secondary schools with the average for all teachers being 28.1 pupils.

The NEA study just referred to also reported that the median time in class instruction was 29.5 hours for elementary-school teachers and 23.6 hours for secondary-school teachers with the average for all teachers being 26.9 hours. Other studies dealing with teacher instruction loads generally show close agreement with the above findings. The NEA report of 1950, according to Collins,[13] stated that elementary teachers spend on the average 28 hours and 15 minutes in class instruc-

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[11]Black, op. cit., p. 2.

[12]National Education Association, Research Division, "Time Devoted to School Duties". NEA Research Bulletin, Vol. 40, No. 3, Oct., 1962, p. 84.

[13]Collins, op. cit., p. 171.

tion while secondary school teachers spend an average of 23.1 hours in classroom instruction. In a study carried out by the A.T.A.[14] it is reported that the average weekly hour workload of an Alberta teacher is between 49.9 and 51.9 hours with an average of 25.2 hours or 49.5 per cent of the weekly hour load being devoted to instruction. The Workload of Canadian Teachers, a CTF National Study, [15] reports that the mean weekly hour load for the teachers of the nine provincial groups in the study is 50.4 hours with 24.7 hours being devoted to instruction.

Downey[16] reports in his study that credit offerings in secondary schools in Alberta by sizes of schools were found to be 97, 136, 180, 235, 276 and 408 in schools have enrollments of 1-39, 40-99, 200-299, 300-399 and 400+ respectively. He concludes that "as the schools increase in size the course offerings increase correspondingly until in the large composite high schools a variety of courses equivalent to several patterned programs is offered".[17]

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[14]Professional Load Committee of the Alberta Teachers' Association, The Professional Load of Alberta Teachers. Research Monograph No. 4, Edmonton, March, 1963, p. 12.

[15]Ibid., pp. 89-91, citing Canadian Teachers' Federation, Research Division, The Workload of Canadian Teachers. Ottawa, June, 1962.

[16]Downey, op. cit., p. 37.

[17]Ibid.

In this same report smallness in size was associated with rural schools and it was reported "that the typical rural teacher teaches more subjects to fewer students and supervises more activities, again for fewer students".[18] Many of the recommendations made in this same report appear to be aimed at developing and making better use of teaching talent.

III. SCOPE OF THE STUDY

The sample

A list of all approved public secondary schools in Alberta school divisions and counties was compiled. Because of the influence that the size of school, as based on student enrollment, might have on class size and staff utilization a sample of schools stratified according to school enrollments was selected. On the list were 20 schools that had enrollments of less than ten pupils in the secondary grades. These schools were not included in the sample because of great deviation in practices followed by them and because of lack of clarity as to class sizes and instruction times. Also, schools of this size are rapidly disappearing and play a progressively smaller part in the over-all education picture. The remaining schools were grouped into four categories on the basis of enrollments. The four enrollment categories selected were 150+, 100-150, 50-99 and 10-49. Schools in each enrollment category were arranged in alphabetical order and numbers in increasing sequence beginning with the number one were

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[18] *Ibid.*, p. 49.

assigned to each school in a category. The table of random numbers[19] was used to select the schools in each enrollment category to make up the sample to be used in this study. The names and enrollments of the schools in the sample are listed in Appendix A. Table I shows the relation of the sample to the total number of secondary schools in Alberta, with the schools classified according to enrollment categories.

TABLE I

RANDOM SAMPLE OF SECONDARY SCHOOLS STRATIFIED ON THE BASIS OF ENROLLMENTS AND ITS RELATION TO THE TOTAL NUMBER OF SECONDARY SCHOOLS

Enrollment Category	Number in the Province	Number in Sample	Number of Extras
Less than 10	20	None	None
10-49	94	16	4
50-99	89	15	3
100-150	32	5	2
150+	37	6	2
Totals	272	42	11

To facilitate reporting of findings for each enrollment category and making of comparisons between categories the following enrollment

[19]Dixon, W. J. and Massey, F. J., Introduction to Statistical Analysis. New York: McGraw-Hill, 1957, pp. 366-370.

category classification will be used:

TABLE II

CLASSIFICATION OF ENROLLMENT CATEGORIES OF SCHOOLS USED IN THE SAMPLE

Enrollment Category Classification	Enrollment Range
A	150+
B	100-150
C	50-99
D	10-49

Assumptions

1. Information on the FORM A school registration form (Appendix B) for each school represents the practices followed by that school for the whole school term; class sizes and teachers' teaching times do not change significantly during the school term.

2. The sample, randomly picked, which consists of approximately one-sixth of the total number of schools in each enrollment category is representative of schools in the respective categories.

Limitations

1. The averages found for class sizes and instruction times of teachers will represent the averages of practices in public secondary schools in school divisions and counties in Alberta for the school

term 1962-63 and should not be interpreted to mean the optimum or ideal.

2. Other factors which vary from one school to another may influence staff utilization practices; e.g., pupil enrollments, facilities available, adequacy of administrative personnel, and demands for extra-curricular instruction and supervision.

Delimitations

1. The study is based on data for the school term 1962-63.

2. Schools having enrollments of less than ten pupils but which would otherwise qualify for representation in the sample are not included in the study.

3. The findings for time spent in instruction are based only on teachers who (a) spend full-time in classroom instruction and (b) who spend at least 2/3 of their instruction time in the secondary school grades, or who offer instruction in at least 22 credits in secondary school courses.

4. Because classes in Home Economics and Industrial Arts courses must of necessity be small and because all schools do not offer an extensive program in these subjects, these classes will not be included in calculating average class sizes. Including these classes would result in lowering the average class sizes in schools which offered these courses in proportion to the extent that they offered them. Class sizes in the Home Economics and Industrial Arts subject area will be reported separately.

IV. DEFINITIONS OF TERMS USED

Secondary school. Secondary school as used in this study refers to that section of a school which consists of Grades 10, 11 and 12; or any one or two of these grades. To graduate with a high school diploma in Alberta a student must receive a minimum of 100 credits in secondary school courses. A credit is equivalent to a minimum of 40 minutes of instruction per week; in special cases permission may be granted to schools to deviate slightly from this requirement.

Subject area classification. For purposes of this study courses will be classified into various subject areas as follows: English-French-Social Studies (Eng-Fr-SS) will include all Literature, Language, Social Studies and foreign languages; Mathematics-Science (Math-Sc) will include all Mathematics, General Science, Physics, Chemistry and Biology courses; Others will include remaining courses which do not fall in the other two classifications with the exception that for purposes of class sizes Home Economics and Industrial Arts courses will be excluded and listed separately.

Pupil-credits. Pupil-credits, in each course, is the product of the number of pupils receiving instruction in the course and the credit value of the course. Examples are:

Course	Enrollment	Credit Value of Course	Pupil-credits per week
Dramatics 10	25	4	100
Math. 10	33	5	165
S.S. 10	45	5	225

Instruction credits. Instruction credits represents the number of credits of instruction offered per week. Instruction offered to one class in a five-credit course is equal to five instruction credits. Instruction to two such classes would equal ten instruction credits. When classes in two courses are combined the instruction credits provided will be apportioned to each course roughly in proportion to the enrollments.

Class size. Class size represents the size of classes that meet at any one time for instruction from an individual teacher in courses approved by the Department of Education and offered during the regular school day. Average class size will be found by dividing pupil-credits by instruction credits.

Instruction time per teacher. "Instruction time per teacher" means the amount of time that a teacher spends per week in actually instructing classes.

Teacher output. Teacher output, for purposes of this study, is defined as the product of class size and instruction time. When teacher instruction time is in credits teacher output will be in terms of pupil credits whereas when teacher instruction time is in hours teacher output will be in terms of pupil-hours. Teacher output as used in this study is a quantitative measure of teacher productivity.

CHAPTER II

THE PROCEDURE OF THE STUDY

I. SOURCE AND TABULATION OF DATA

Following the selection of the sample of schools to be used in the study (Appendix A), the FORM A registration cards (Appendix B) of the Department of Education were used as a source of data for each school. Data were recorded directly upon information sheets and subsequently the necessary calculations were made and the resulting data was recorded on data sheets. A sample of an A card and the related information and data sheets are included in Appendix C. Each school in the sample was treated in a similar manner.

The data sheets included the following information for each school in the sample:

1. The name of the school.

2. The name of the school division or county in which the school was located.

3. The enrollment by grades and the total for the school.

4. The average class sizes by subject areas in the grades. The calculations involved summing the pupil-credits for each course in a particular grade and subject area and dividing this sum by the total instruction credits provided in these courses. Average class size for the composite of the school as well as averages for the grades

and subject areas will be included. These averages will be arithmetic means.

5. The average number of credits enrolled-in per student registered in each of Grades 10, 11 and 12. These figures will be arrived at by dividing the total pupil-credits in each grade by the enrollment in that grade.

6. The total number of credits offered in each grade.

7. The distribution of teachers on the basis of instruction time per week and by subject areas of specialization. Teachers' teaching loads as listed in Section II of the Form A school registration form are the original source of information for this distribution.

For each enrollment category the information on class sizes, on number of credits enrolled-in per pupil registered and on the number of credits offered will be recorded in terms of ranges and medians. The tables, therefore, will list ranges and medians of the averages for the schools in the sample. The median is used to report the average as it is less likely than the arithmetic mean to be influenced by a score or scores which deviate quite markedly from the others in the group. The distribution of teachers on the basis of instruction time will simply be consolidated for the schools being represented.

II. THE PILOT STUDY

A pilot study was carried out to check on the completeness and practicality of the outlined procedure.

The sample

Four senior high schools from school divisions and counties in Alberta were selected and information from the Form A registration cards was collected. The schools had enrollments of 157, 202, 192 and 258 and therefore fell in the 150+ category. The pilot study included 809 senior high school students; 266 in Grade 10, 274 in Grade 11 and 269 in Grade 12.

Summary of findings

The average class sizes (arithmetic means) by grades were found to be 23.0 pupils in Grade 10, 22.5 in Grade 11 and 20.5 in Grade 12 with the weighted average for the four schools being 22.2 pupils per class. Table III shows the average class size for instruction purposes in the various subject areas and grades.

The pilot study findings indicate that teachers spend an average of 22 hours per week in actual classroom instruction; 22 hours per week is the median. Table IV shows the distribution of teachers on the basis of instruction time by subject areas of specialization.

The average number of credits enrolled-in per pupil registered was found to be 39.5, 36.9 and 23.4 in Grades 10, 11 and 12, respectively.

Conclusions

The pilot study indicates a tendency for class sizes to decrease by grades from Grade 10 to 12. Class sizes in the subject area classified as Others appear to be smaller.

The pilot study indicated a median teacher instruction time of

TABLE III

THE AVERAGE CLASS SIZE FOR INSTRUCTION PURPOSES
BY SUBJECT AREAS AND GRADES

Grade	Eng-Fr-SS	Math-SC	Others	All
10	25.7	22.7	19.8	23.0
11	24.0	22.5	19.5	22.5
12	21.6	21.8	12.3	20.5
10, 11 & 12	24.0	22.3	18.7	22.2

TABLE IV

DISTRIBUTION OF TEACHERS ON THE BASIS OF INSTRUCTION
TIME AND SUBJECT AREAS

Hours of Instruction/Wk.	Subject Areas of Specialization			Total
	Eng-Fr-SS	Math-Sc	Others	
20		1		1
20 2/3	2	1	1	4
21 1/3	1	1		2
22	5	3	1	9
22 2/3	2			2
23 1/3	1	4	2	7
24	2	1	2	5
Totals	13	11	6	30

22 hours per week. There is some indication that teaching time per teacher is less in the English-French-Social Studies subject area. The figure of 23.4 representing the average credits enrolled-in per pupil registered in Grade 12 would seem to indicate that many students while registered in Grade 12 take Grade 11 courses or take their Grade 12 over a period of two years. The corresponding figure for Grade 10 would indicate that a considerable number of Grade 11 and Grade 12 students enroll in Grade 10 courses.

In the process of working through the pilot study a few changes in the data sheet and in the procedure used in compiling data appeared desirable. These changes were made. It appeared that the anticipated procedure and the kinds of data which could be collected, would enable the aim of the study to be attained.

III. PLAN FOR REPORTING THE FINDINGS

The findings will be reported, with the aid of tables, in Chapter III. Discussion of the findings will be rather brief and aimed at stating and interpreting the various findings that resulted from the survey of the schools.

The findings will be reported by enrollment categories beginning with Category A. The findings for schools in each enrollment category will be presented in the following order:

Class sizes
- (i) Class size for all subjects collectively.
- (ii) Class size by grades.
- (iii) Class size by subject areas.

Instruction time per teacher
(i) Average instruction time per teacher.
(ii) Instruction time by areas of specialization.
Average output per teacher.
Credits enrolled-in per pupil registered.
Average number of credits offered.

Chapter IV will consist of a comparison of the findings for the four enrollment categories.

IV. PLAN FOR THE CONCLUDING CHAPTER

The final chapter will consist of a summary and discussion of the more pertinent findings. Various conclusions and implications that arise from the findings will be stated and discussed. The chapter will conclude with suggestions for further studies in this area of school administration.

CHAPTER III

THE FINDINGS

The findings are reported by enrollment categories in the order of decreasing enrollments. The category classifications are as listed below:

Enrollment Category	Enrollment Range
A	150+
B	100-150
C	50-99
D	10-49

Data for the various schools are generalized in terms of averages, ranges, and medians of averages.

I. FINDINGS FOR ENROLLMENT CATEGORY A

Class sizes

Class size for all subjects collectively. The median class size found for secondary schools in enrollment Category A was 23.5 pupils. The averages for the schools in the sample ranged from 20.7 to 28.3.

Class size by grades. Table V shows by grades the ranges and medians of average class sizes for schools in Category A. Class sizes are 26.0, 23.5 and 18.4 for Grades 10, 11 and 12, respectively. Thus, a continuous decrease in class sizes occurs from Grade 10 through Grade 12.

TABLE V

CLASS SIZES BY GRADES FOR
CATEGORY A SCHOOLS

Grade	Class Size	
	Range	Median
10	21.4-33.7	26.0
11	20.1-26.0	23.5
12	14.7-22.9	18.4
10-12	20.7-28.3	23.5

Class size by subject areas. The median class sizes by subject areas were found to be 25.2, 24.6, and 20.0 for the Eng-Fr-SS, Math-SC and Others subject areas, respectively. The findings indicate that classes are largest in the Eng-Fr-SS subject area. The Others classification, excluding the Industrial Arts and Home Economics area, had the lowest class sizes. As would have been expected, classes in the Home Economics and Industrial Arts subject area are found to be considerably smaller, the average being 13.2.

Instruction time per teacher

Average instruction time per teacher. The median hours of instruction per week for teachers in Category A schools was found to be 22. The distribution of teachers on the basis of number of hours of instruction per week as found in the study is given in Table VII.

TABLE VI

CLASS SIZES BY SUBJECT AREAS
FOR CATEGORY A SCHOOLS

Subject Area Classification	Class Size	
	Range	Median
Eng-Fr-SS	21.8-29.9	25.2
Math-SC	21.4-26.8	24.6
Others*	17.5-27.0	20.0
All*	20.7-28.3	23.5
Ind. Arts & H. Ec.	8.7-17.0	13.2

*Excluding Home Economics and Industrial Arts courses.

TABLE VII

DISTRIBUTION OF CATEGORY A TEACHERS ON THE BASIS
OF INSTRUCTION TIME AND SUBJECT AREAS

Hours of Instruction/Wk.	Subject Area Classification			Total
	Eng-Fr-SS	Math-SC	Other	
18	1	1		2
18 2/3				
19 1/3	1			1
20	4	3	2	9
20 2/3	1	1	3	5
21 1/3	3			3
22	8	2	2	12
22 2/3	2	1	1	4
23 1/3	1	5	3	9
24		1	5	6
24 2/3				
25 1/3				
26			1	1
26 2/3				
Totals	21	14	17	52

Instruction time by areas of specialization. The median hours of instruction per teacher per week for Category A teachers were 22, 22 1/3, and 23 1/3 for the subject areas of Eng-Fr-SS, Math-Sc and Others, respectively. Table VII shows the ranges and detailed distribution of instruction times, by areas of specialization.

Average output per teacher

Teacher output as defined in this study is the product of class size and instruction time. For schools in Category A the average class size was found to be 23.5 and the average instruction time per week for a teacher was found to be 22 hours. Because one credit is equivalent to 40 minutes of instruction per week, 22 hours of instruction would in most cases be equivalent to 33 credits of instruction. It follows, then, that the average output per teacher in schools in enrollment Category A was (23.5 x 33) 775.5 pupil-credits per week or (23.5 x 22) 517 pupil-hours per week.

Credits enrolled-in per pupil registered

The findings are that for each student registered in Grades 10, 11 and 12 the number of credits enrolled-in was 43.1, 36.1 and 22.3, respectively. Table VIII lists the ranges and medians of the number of credits enrolled-in per student registered in each grade in Category A schools.

Average Number of credits offered

The findings indicate that the number of credits offered at each grade level decreases from Grade 10 to Grade 12. The findings are that the median number of credits offered in Category A schools in Grades 10,

11 and 12 were 80, 67 and 53, respectively.

TABLE VIII

AVERAGE NUMBER OF CREDITS ENROLLED-IN PER PUPIL REGISTERED IN CATEGORY A SCHOOLS

Grade	Number of Credits Enrolled-in Per Pupil	
	Range	Median
10	41.9-47.6	43.1
11	30.0-37.8	36.1
12	20.7-23.7	22.3
10-12	32.6-35.5	35.1

II. FINDINGS FOR ENROLLMENT CATEGORY B

Class sizes

Class size for all subjects collectively. The median class size for secondary schools in enrollment Category B found in this study was 20.0. The averages for the schools in the sample ranged from 18.6 to 22.1.

Class size by grades. Average class sizes by grades were found to be 21.0, 22.6, and 16.4 for Grades 10, 11 and 12, respectively. Table IX shows by grades the ranges and medians of average class sizes for schools in enrollment Category B.

Class size by subject areas. The median class sizes by subject areas were found to be 21.4, 19.5 and 18.3 for the Eng-Fr-SS, Math-Sc

TABLE IX

CLASS SIZES BY GRADES FOR
CATEGORY B SCHOOLS

Grade	Class Size	
	Range	Median
10	19.8-21.6	21.0
11	20.0-25.6	22.6
12	13.8-19.7	16.4
10-12	18.6-22.1	20.0

and Others subject areas, respectively. As in the Category A schools the average class size in the Home Economics and Industrial Arts area was considerably smaller; being 9.0. Table X shows the ranges and medians of average class sizes by subject areas.

TABLE X

CLASS SIZES BY SUBJECT AREAS
FOR CATEGORY B SCHOOLS

Subject Area Classification	Class Size	
	Range	Median
Eng-Fr-SS	20.4-24.7	21.4
Math-Sc	16.1-22.3	19.5
Others*	16.7-21.6	18.3
All*	18.6-22.1	20.0
Ind. Arts & H. Ec.	7.5-11.5	9.0

*Excluding Home Economics and Industrial Arts courses.

Instruction time per teacher

Average instruction time per teacher. The median hours of instruction per teacher per week in Category B schools was found to be 21. The distribution of teachers on the basis of hours of instruction per week as found in the study for category B schools is given in Table XI.

Instruction time by areas of specialization. The median hours of instruction per teacher per week found in this study for Category B schools are 21 1/3, 20, and 21 2/3 for the subject areas of Eng-Fr-SS, Math-Sc and Others, respectively. Table XI shows the ranges and detailed distribution of teacher instruction times by subject areas of specialization for Category B schools.

TABLE XI

DISTRIBUTION OF CATEGORY B TEACHERS ON THE BASIS OF INSTRUCTION TIME AND SUBJECT AREAS

Hours of Instruction/Wk.	Subject Area Classification			Total
	Eng-Fr-SS	Math-Sc	Other	
18				
18 2/3	1			1
19 1/3		1	1	2
20		4	2	6
20 2/3	2		1	3
21 1/3			2	2
22	1	1	2	4
22 2/3				
23 1/3	2		2	4
24			2	2
24 2/3				
25 1/3				
26				
Total	6	6	12	24

Average output per teacher

For schools in Category B the average class size was found to be 20.0 and the average instruction time per teacher per week was found to be 21 hours. It follows, then, that the average output per teacher in schools in Category B was (20.0 x 21) 420 pupil-hours per week. If teacher instruction time is expressed in credits (21 hours = 31½ credits) then teacher output in terms of pupil-credits for teachers in this category would be (31½ x 20) 630 pupil-credits.

Credits enrolled-in per pupil registered

The findings are that for each student registered in Grades 10, 11 and 12 the average number of credits enrolled-in was 41.6, 33.8 and 21.8, respectively. Table XII lists the ranges and medians of the number of credits enrolled-in per student registered in each grade in Category B schools.

TABLE XII

AVERAGE NUMBER OF CREDITS ENROLLED-IN PER PUPIL REGISTERED IN CATEGORY B SCHOOLS

Grade	Number of Credits Enrolled-in/Pupil	
	Range	Median
10	35.5-43.4	41.6
11	27.9-36.4	33.8
12	19.2-23.5	21.8
10-12	30.8-33.5	32.7

10-15	[illegible]	[illegible]
15	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Average number of credits offered

The average number of credits offered in Category B schools as found in the study were 51, 48 and 35 in Grades 10, 11 and 12, respectively.

III. FINDINGS FOR ENROLLMENT CATEGORY C

Class sizes

Class size for all subjects collectively. The median class size for secondary schools in enrollment Category C found in this study was 17.2. The averages for the schools in the sample ranged from 13.1 to 20.2.

Class size by grades. Average class sizes by grades were found to be 20.0, 16.7 and 12.3 for Grades 10, 11 and 12, respectively. Table XIII shows by grades the ranges and medians of average class sizes for schools in enrollment Category C.

TABLE XIII

CLASS SIZES BY GRADES FOR CATEGORY C SCHOOLS

Grade	Class Size	
	Range	Median
10	11.9-27.0	20.0
11	12.4-21.4	16.7
12	8.2-18.6	12.3
10-12	13.1-20.2	17.2

Class size by subject areas. The median class sizes by subject areas were found to be 19.8, 13.6, and 17.9 for the Eng-Fr-SS, Math-Sc and Others subject areas, respectively. Table XIV shows the ranges and medians of average class sizes by subject areas.

TABLE XIV

CLASS SIZES BY SUBJECT AREAS
FOR CATEGORY C SCHOOLS

Classification of Subject Area	Class Size	
	Range	Median
Eng-Fr-SS	16.3-24.2	19.8
Math-Sc	9.9-18.7	13.6
Others*	13.2-24.5	17.9
All*	13.1-20.2	17.2
Ind. Arts & H.Ec.#	8.3-17.0	12.7

*Excluding Home Economics and Industrial Arts courses.

#Only five schools offered courses in this area.

Instruction time per teacher

Average instruction time per teacher. The median hours of instruction per teacher per week in Category C schools was found to be 22 hours. The distribution of teachers on the basis of hours of instruction per week as found in the study for Category C schools is given in Table XV.

Instruction time by areas of specialization. The median hours of instruction per teacher per week for Category C schools were found

to be 21 1/3, 23, and 22 2/3 for the subject areas of Eng-Fr-SS, Math-Sc and Others, respectively. Table XV shows the ranges and detailed distribution of teacher instruction times by subject areas of specialization for Category C schools.

TABLE XV

DISTRIBUTION OF CATEGORY C TEACHERS ON THE BASIS OF INSTRUCTION TIME AND SUBJECT AREAS

Hours of Instruction/Wk.	Subject Area Classification			
	Eng-Fr-SS	Math-Sc	Other	Total
18	2	1		3
18 2/3				
19 1/3	1	1	1	3
20	1	1		2
20 2/3	2		3	5
21 1/3	2	1	1	4
22	2	1	1	4
22 2/3	2	1	2	5
23 1/3		4	3	7
24	1		2	3
24 2/3		1		1
25 1/3	1	1	2	4
26				
Total	14	12	15	41

Average output per teacher

For schools in Category C the average class size was found to be 17.2 and the average instruction time per teacher per week was found to be 22 hours. It follows, then, that the average output per teacher in schools in this category was (17.2 x 22) 378.4 pupil-hours per week. If teacher instruction time is expressed in credits (22 hours = 33 credits) then teacher output in terms of pupil-credits would be 567.6

pupil-credits.

Credits enrolled-in per pupil registered

The findings indicate that for each student registered in Grades 10, 11 and 12 the average number of credits enrolled-in is 41.7, 30.9 and 22.2, respectively. Table XVI lists the ranges and medians of the number of credits enrolled-in per student registered in each grade in Category C schools.

TABLE XVI

AVERAGE NUMBER OF CREDITS ENROLLED-IN PER PUPIL REGISTERED IN CATEGORY C SCHOOLS

Grade	Number of Credits Enrolled-in Per Pupil	
	Range	Median
10	36.4-47.2	41.7
11	23.4-42.6	30.9
12	17.5-27.1	22.2
10-12	29.0-34.0	32.0

Average number of credits offered

The average number of credits offered in Category C schools as found in this study were 52, 43 and 35 in Grades 10, 11 and 12, respectively.

IV. FINDINGS FOR ENROLLMENT CATEGORY D

Class sizes

Class size for all subjects collectively. The median class size

for secondary schools in enrollment Category D found in this study was 12.9. The averages for the schools in the sample ranged from 6.4 to 20.0.

Class size by grades. Average class sizes by grades were found to be 15.6, 10.0 and 6.8 for grades 10, 11 and 12, respectively. Table XVII shows by grades the ranges and medians of average class sizes for schools in enrollment category D.

TABLE XVII

CLASS SIZES BY GRADES FOR CATEGORY D SCHOOLS

Grade	Class Size	
	Range	Median
10	8.2-28.4	15.6
11	3.4-21.0	10.0
12	3.8-12.2	6.8
10-12	6.4-20.0	12.9

Class sizes by subject areas. The median class sizes by subject areas were found to be 14.2, 10.3 and 14.1 for the Eng-Fr-SS, Math-Sc, and Others subject areas respectively. Table XVIII shows the ranges and medians of average class sizes by subject areas.

TABLE XVIII

CLASS SIZES BY SUBJECT AREAS
FOR CATEGORY D SCHOOLS

Subject Area Classification	Class Size	
	Range	Median
Eng-Fr-SS	7.8-21.3	14.2
Math-Sc	3.8-18.3	10.3
Others*	8.5-26.9	14.1
All*	6.4-20.0	12.9
Ind. Arts & H.Ec.#	4.5-18.0	8.0

*Excluding Home Economics and Industrial Arts courses.

#Only five schools offered courses in this area.

Instruction time per teacher

Average instruction time per teacher. The median hours of instruction per teacher per week in Category D Schools was found to be 23 1/3 hours. The distribution of teachers on the basis of hours of instruction per week as found in the study for Category D Schools is given in Table XIX.

Instruction time by areas of specialization. The median hours of instruction per teacher per week for Category D Schools were found to be 23, 23 1/3, and 23 1/3 for the subject areas of Eng-Fr-SS, Math-Sc and Others, respectively. Table XIX shows the ranges and detailed distribution of teacher instruction times by subject areas of specialization for Category D Schools.

TABLE XIX

DISTRIBUTION OF CATEGORY D TEACHERS ON THE BASIS OF INSTRUCTION TIME AND SUBJECT AREAS

Hours of Instruction/Wk.	Subject Area Classification			Total
	Eng-Fr-SS	Math-SC	Other	
18				
18 2/3				
19 1/3			1	1
20	1			1
20 2/3				
21 1/3	1	1		2
22		2	2	4
22 2/3	2			2
23 1/3	1	3	4	8
24	2			2
24 2/3	1		2	3
25 1/3		2	1	3
26			1	1
26 2/3			1	1
Total	8	8	12	28

Average output per teacher

For schools in Category D the average class size was found to be 12.9 and the average instruction time per teacher per week was found to be 23 1/3 hours. It follows, then, that the average output per teacher in schools in this Category was (12.9 x 23 1/3) 300.6 pupil-hours per week. If teacher instruction time is expressed in credits (23 1/3 hours = 35 credits) then teacher output would be (12.9 x 35) 451.5 pupil-credits.

Credits enrolled-in per pupil registered

The findings indicate that for each student registered in Grades 10, 11 and 12 the average number of credits enrolled-in was

36.7, 35.9 and 21.9, respectively. In eight of the schools in the sample falling in this enrollment category the practice of cycling Grade 10 and 11 courses was followed. For computing average number of credits enrolled-in per student in each grade the composite average for Grades 10 and 11 was reported for each of the grades. Table XX lists the ranges and medians of the number of credits enrolled-in per student registered in each grade in Category D schools. Composite data for Grades 10-12 is not reported as many schools offered instruction in only Grade 10 or Grades 10 and 11.

TABLE XX

AVERAGE NUMBER OF CREDITS ENROLLED-IN PER PUPIL
REGISTERED IN CATEGORY D SCHOOLS

Grade	Number of Credits Enrolled-In Per Pupil	
	Range	Median
10	25.1-39.6	36.7
11	23.8-42.2	35.9
12	16.1-28.8	21.9

Average number of credits offered

The average number of credits offered in Category D schools in Grades 10, 11 and 12 were found to be 38, 28 and 30, respectively.

CHAPTER IV

COMPARISON OF FINDINGS FOR THE FOUR ENROLLMENT CATEGORIES

I. CLASS SIZE

Class sizes for all subjects collectively

The median class sizes for the various enrollment categories were found to be 23.5, 20.0, 17.2 and 12.9 for Categories A, B, C, and D, respectively. These findings indicate that a relationship exists between class size and size of school as measured by pupil enrollment. Table XXI reveals this relationship.

TABLE XXI

RANGES AND MEDIANS OF AVERAGE CLASS SIZES BY ENROLLMENT CATEGORIES

Enrollment Category	Class Sizes	
	Range	Median
A	20.7-28.3	23.5
B	18.6-22.1	20.0
C	13.1-20.2	17.2
D	6.4-20.0	12.9

From the table it is evident that median class sizes drop quite considerably with decreases in enrollments. Therefore, larger classes are associated with larger schools--schools having larger enrollments.

Class sizes by grades

Table XXII shows the medians of average class sizes by grades in the four enrollment categories.

TABLE XXII

MEDIANS OF AVERAGE CLASS SIZES BY GRADES FOR SCHOOLS IN THE VARIOUS ENROLLMENT CATEGORIES

Enrollment Category	Grade 10	Grade 11	Grade 12
A	26.0	23.5	18.4
B	21.0	22.6	16.4
C	20.0	16.7	12.3
D	15.6	10.0	6.8

From the above table one observes that for each grade as the enrollment of the school, by enrollment categories, decreases the median class size decreases. Thus, in each grade class sizes tend to decrease with decreases in enrollments.

With only one exception median class sizes decrease as one moves from Grade 10 through to Grade 12 in each enrollment category. The one exception is in the B enrollment category where the median class size is 22.6 in Grade 11 while it is only 21.0 in Grade 10. Keeping the one exception in mind one could state that generally class sizes have a tendency to decrease with grades from Grade 10 through to Grade 12.

Class sizes by subject areas

Table XXIII shows the median class sizes by subject areas for schools in the various enrollment categories.

TABLE XXIII

AVERAGE CLASS SIZES BY SUBJECT AREAS IN SCHOOLS IN THE VARIOUS ENROLLMENT CATEGORIES

Enrollment Category	Subject Areas			I. Arts & H. Ed.
	Eng-Fr-SS	Math-Sc	Others	
A	25.2	24.6	20.0	13.2
B	21.4	19.5	18.3	9.0
C	19.8	13.6	17.9	12.7
D	14.2	10.3	14.1	8.0

In enrollment Categories A and B the median class sizes are highest in the Eng-Fr-SS area, second largest in the Math-Sc area and lowest in Others. In the C and D enrollment categories the largest median class sizes are likewise in the Eng-Fr-SS area but the second largest are in the Others area and the smallest in the Math-Sc area. Median class sizes for the four enrollment categories in the Industrial Arts and Home Economics area range from 8.0 to 13.2, being 13.2, 9.0, 12.7, and 8.0 in Categories A, B, C, and D, respectively.

II. INSTRUCTION TIME PER TEACHER

Instruction time per teacher

One must keep in mind that only teachers who spend full-time in instruction and who spend at least two-thirds of their instruction time in secondary school were included in the tabulation of the instruction time per teacher in this study. Particularly in the schools with lower enrollments, many teachers were not included because they spent more than one-third of their time in junior high school. The distribution of teachers in the various enrollment categories on the basis of instruction time is shown in Table XXIV.

TABLE XXIV

DISTRIBUTION OF TEACHERS IN THE VARIOUS ENROLLMENT CATEGORIES ON THE BASIS OF INSTRUCTION TIME

Hours of Instruction/Wk.	Enrollment Categories				Total
	A	B	C	D	
18	2		3		5
18 2/3		1			1
19 1/3	1	2	3	1	7
20	9	6	2	1	18
20 2/3	5	3	5		13
21 1/3	3	2	4	2	11
22	12	4	4	4	24
22 2/3	4		5	2	11
23 1/3	9	4	7	8	28
24	6	2	3	2	13
24 2/3			1	3	4
25 1/3			4	3	7
26	1			1	2
26 2/3				1	1
Totals	52	24	41	28	145

[illegible]

The median instruction time per teacher per week as found in this study was 22 hours, the equivalent of 33 credits. The mode was 23 1/3 hours per week with another 18 teachers--the third highest frequency--having 20 hours per week. The three highest frequencies correspond to credit-equivalents of 35, 33 and 30.

The median instruction times per teacher, as reported previously, were 22, 21, 22 and 23 1/3 for enrollment categories A, B, C, and D, respectively. Instruction time per teacher was found to be lowest in Category B schools and highest in Category D schools.

Instruction time by areas of specialization

Table XXV shows the distribution of teachers in the whole sample on the basis of instruction time per teacher by subject areas of specialization.

TABLE XXV

DISTRIBUTION OF TEACHERS BY SUBJECT AREAS AND BY INSTRUCTION TIME PER WEEK

Hours of Instruction/Wk.	Subject Specialty			
	Eng-Fr-SS	Math-Sc	Others	Total
18	3	2		5
18 2/3	1			1
19 1/3	2	2	3	7
20	6	8	4	18
20 2/3	5	1	7	13
21 1/3	6	2	3	11
22	11	6	7	24
22 2/3	6	2	3	11
23 1/3	4	12	12	28
24	3	1	9	13
24 2/3	1	1	2	4
25 1/3	1	3	3	7
26			2	2
26 2/3			1	1
Totals	49	40	56	145

The median instruction time per teacher by areas of specialization are 22, 22 and 23 1/3 hours in the Eng-Fr-SS, Math-Sc and Others areas respectively. Table XXVI summarizes the findings with respect to instruction times. This table, based on medians, classifies instruction times by enrollment categories and subject specialties.

TABLE XXVI

MEDIAN INSTRUCTION TIMES OF TEACHERS, BY ENROLLMENT CATEGORIES AND SUBJECT AREAS

Enrollment Category	Subject Specialty			
	Eng-Fr-SS	Math-Sc	Others	Composite
A	22	22 1/3	23 1/3	22
B	21 1/3	20	21 2/3	21
C	21 1/3	23	22 2/3	22
D	23	23 1/3	23 1/3	23 1/3
A,B,C, & D	22	22	23 1/3	22

The findings indicate that teachers who fall in the Others subject area classification and those in Category D schools generally spend more time in instruction. On the other hand, teachers in Category B schools are found to spend least time in classroom instruction.

III. OUTPUT PER TEACHER

In terms of pupil-hours the average outputs per teacher were

[illegible]

found to be 517, 420, 378.4 and 300.6 for enrollment Categories A, B, C, and D, respectively. The output per teacher drops quite markedly with decreases in enrollments. For purposes of comparison, the teacher-output found in this study for Category A schools will be used as a base. Outputs for the teachers in each of the other three enrollment categories will be compared to this base, 517 pupil-hours, which will be equated to an index of one. Table XXVII shows the average output per teacher for each enrollment category and the resulting factor when the output in each category is compared to the base output of 517 pupil-hours per week.

TABLE XXVII

COMPARISON OF AVERAGE TEACHER OUTPUT FOR THE FOUR ENROLLMENT CATEGORIES

Enrollment Category	Average Teacher Output	
	Pupil-Hours	Conversion to Base 517
A	517	1.00
B	420	.81
C	378.4	.73
D	300.6	.58

The findings indicate a direct and fairly uniform relationship between the size of school, as based on pupil enrollment, and teacher output, as measured by pupil-hours of instruction provided by a teacher. It is interesting to note that even though teachers in Category D have the highest instruction time per teacher they have the lowest teacher

Lower by the 5%, 10%, 15% and 20% of the enrollment categories 4, 5, 6, and 7, respectively. The output per teacher stays quite nearly the same because the enrollments. Our purpose of measuring the production-output level is this study for obtaining a relationship is used as a base. Outputs for the teachers in each of the other three enrollment categories will be compared to this base. All pupil-hours which will be equated to an index of one. This MEAN shows the average output per teacher for each enrollment category and the resulting factor when the output in each category is compared to the base output of 32 pupil-hours per week.

TABLE [illegible]

COMPARISON OF TEACHER PRODUCTIVITY BY THE [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

output.

IV. CREDITS ENROLLED-IN PER STUDENT REGISTERED

Table XXVIII summarizes the findings with regard to the average number of credits enrolled-in per student registered. The table classifies the information by grades and by enrollment categories of the schools.

TABLE XXVIII

THE AVERAGE NUMBER OF CREDITS ENROLLED-IN PER STUDENT REGISTERED, BY GRADES AND ENROLLMENT CATEGORIES

Enrollment Category	Grade 10	Grade 11	Grade 12
A	43.1	36.1	22.3
B	41.6	33.8	21.8
C	41.7	30.9	22.2
D	36.7	35.9	21.9

The number of credits enrolled-in does not vary widely with enrollment categories. This could be attributed in part to the requirements for graduation from secondary school which demand a fairly standard credit load each year. A generalization would be that for every student registered in Grade 12 approximately 22 credits would be enrolled-in at the Grade 12 level. Similarly, as a guide one might suggest that for each student registered in Grade 11 approximately 33 credits would be enrolled-in at the Grade 11 level. At the Grade 10

level, excluding schools in Category D, an approximation would be 42 credits enrolled-in per student registered in Grade 10. One also observes the slightly higher figures at the Grade 10 and 11 levels for enrollment Category A. This could suggest that because of a more diverse and flexible program offered generally more students pick up courses from the preceding grade or grades.

V. NUMBER OF CREDITS OFFERED

Table XXIX summarizes by grades and enrollment categories the medians of the number of credits offered in the schools.

TABLE XXIX

MEDIAN NUMBER OF CREDITS OFFERED, BY GRADES AND ENROLLMENT CATEGORIES

Enrollment Category	Grade 10	Grade 11	Grade 12	Grades 10-12
A	80	67	53	199
B	51	48	35	145
C	52	43	35	130
D*	38	28	30	92

*Of the 16 schools in the sample 15 offered courses in Grade 11 and only 10 offered courses in Grade 12.

The median credit offerings by schools are 199, 145, 130 and 92 in enrollment Categories A, B, C, and D, respectively. The programs

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

appear curtailed quite markedly by a decrease in enrollment from Category A to Category B and less so for the decrease from enrollment category B to C. In a majority of schools in Category D the program appears to be restricted to the point where a complete high school program is not available to any student.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The study began with a general discussion of two aspects of teacher working conditions, instruction time per teacher and class sizes, and their possible relationship with teachers' fulfillment of their duties. The problem as outlined for this study was defined, its significance discussed and available information summarized. Briefly stated, the study was aimed at surveying schools to compile information on teacher instruction loads and class sizes.

The latter part of Chapter I was devoted to outlining the scope of the study and defining the terms to be used. The sample consisted of approximately one-sixth of the public secondary schools in Alberta school divisions and counties. The sample was stratified on the basis of school enrollments; four enrollment categories were used.

In Chapter II the procedure of the study was outlined. The data for the study were taken from the Form A school registration cards which are kept by the Examinations Branch of the Department of Education. The raw data were transferred to information sheets and subsequently, after various computations, the required data were recorded on the data sheets. A sample of an A card for a particular school and the related information sheet and data sheet are shown in Appendix C. A brief summary of a pilot study, which was carried out, was reported. The chapter concluded with an outline of plans for reporting the findings

and for the concluding chapter.

The findings of the study, by enrollment categories, were reported in chapter three. In reporting the findings tables were used quite extensively to illustrate variations and relationships. Chapter four consisted of a comparison of the findings for the four enrollment categories.

I. SUMMARY AND DISCUSSION OF FINDINGS

The findings on class sizes reveal a relationship between class size and the enrollment of the school. The median class sizes were found to be 23.5, 20.0, 17.2 and 12.9 for schools in enrollment categories of 150+, 100-150, 50-99, and 10-49, respectively. The median class size of 12.9 for schools having enrollments of 10-49 is slightly above one-half of that of 23.5 for schools having enrollments of 150+. The class sizes found are considerably smaller than previous studies reported. Most previous studies based their figures on register class sizes and many were based on all of the grades from 1 to 12. Also, most previous studies reported class sizes for a larger cross-section of types and sizes of schools. The findings of this study indicate that smaller class sizes are found in schools having smaller enrollments. Consequently, teachers in smaller schools teach to fewer students. It would appear to follow that, assuming teachers of relatively similar qualifications, instruction costs per pupil would be higher in schools of lower enrollments.

Class sizes were found to decrease, generally, from Grades 10 to

12 in each of the enrollment categories. The fact that class sizes decrease as one moves from Grade 10 to Grade 12 raises the question as to whether this happens by intent or is a result of circumstances such as school organization, school programs or limited numbers of students. While on the one hand one may be convinced that the increase in difficulty level of course content at the Grade 12 level requires smaller classes and therefore more individual instruction and attention on the other hand the increased maturity level of students should enable them to benefit more readily from larger group instruction. The study, however, indicates that in actual practice classes are smaller as one moves from Grade 10 to Grade 12.

Class sizes in each enrollment category are largest in the Eng-Fr-SS subject area classification. The Others subject area has the smallest class sizes in the enrollment categories of 150+ and 100-150. In the 50-99 and 10-49 enrollment categories the smallest class sizes are found in the Math-Sc subject area. The fact that class sizes are smaller in the Math-Sc than in the Eng-Fr-SS area may reflect the requirements for graduation. The compulsory nature of most English and Social Studies courses may result in fewer students dropping out of classes in these courses as they move through the secondary grades.

Table XXX is a summary of median class sizes by grades, by subject areas and by enrollment categories as found in this study.

The findings on instruction time per teacher reveal that the three highest frequencies correspond to credit loads of 35, 33 and 30 or hour loads of 23 1/3, 22 and 20 respectively. This tri-modal

feature of the distribution of teachers on the basis of instruction time would appear to reflect the credit value of courses. Most courses are five-credit courses with the remaining courses being generally three-credit ones. The median instruction time per teacher per week found in this study is 22 hours; the equivalent of 33 credits. This finding is somewhat lower than the findings of 23.6[1] and 23.1[2] as reported by the NEA. Their studies, however, were based on a wider cross-section of types and sizes of schools.

Median instruction times per teacher were found to vary somewhat with enrollment categories of schools. Medians of 22, 21, 22 and 23 1/3 hours per week were found for teachers in enrollment categories of 150+, 100-150, 50-99 and 10-49,respectively. Teachers in the schools in the 10-49 enrollment category spend most time in instruction while teachers in schools in the 100-150 enrollment category spend least time in instruction.

The median instruction times per teacher by subject areas of specialization are found to be 22, 22 and 23 1/3 hours for teachers in Eng-Fr-SS, Math-Sc and Others, respectively. The indication is that teachers who specialize in the Eng-Fr-SS or Math-Sc area spend less time in class instruction than those who remain classed as Others.

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[1]National Education Association, Research Division. "Time Devoted to School Duties". NEA Research Bulletin, Vol. 40, No. 3, Oct., 1962, p. 84.

[2]Collins, C. P., "Teaching Load - A Survey of Literature", Canadian Research Digest, No. 8, Fall, 1960, p. 171.

TABLE XXX

MEDIANS OF AVERAGE CLASS SIZES BY GRADES AND SUBJECT AREAS FOR SCHOOLS IN THE VARIOUS ENROLLMENT CATEGORIES

Grade	Enrollment Category	Subject Area Classification			
		Eng-Fr-SS	Math-Sc	Others	All
10	150+	29.0	27.2	22.3	26.0
	101-150	21.3	20.2	18.8	21.0
	50-99	25.0	16.5	20.1	20.0
	10-49	17.4	13.0	15.7	15.6
11	150+	25.4	26.2	19.7	23.5
	100-150	23.8	23.0	18.9	22.6
	50-99	19.0	15.0	13.8	16.7
	10-49	9.9	9.0	11.0	10.0
12	150+	21.1	18.7	9.8	18.4
	100-150	18.3	15.0	9.2	16.4
	50-99	15.3	10.3	6.9	12.3
	10-49	7.7	6.3		6.8
10	150+	25.2	24.6	20.0	23.5
11	100-150	21.4	19.5	18.3	20.0
&	50-99	19.8	13.6	17.9	17.2
12	10-49	14.2	10.3	14.1	12.9

A comparison by enrollment categories indicated that in the 150+ category more teachers proportionately were engaged in teaching in the two subject areas of Eng-Fr-SS and Math-Sc. This is perhaps a consequence of the fact that teachers in the smaller schools are called upon to teach a wider range of courses.

Average teacher output, used in this study as a quantitative measure of teacher productivity, is found to vary quite markedly with the enrollment categories of the schools. It appears that the decrease in class sizes is the predominant factor accounting for the decrease in teacher output as enrollment decreases. The average teacher outputs decrease from 517 pupil-hours through 420, 378.4 and 300.6 for enrollment categories of 150+, 100-150, 50-99, and 10-49, respectively. Thus, teacher output is considerably lower in schools in the lower enrollment categories despite the fact that these teachers generally teach a wider range of courses and spend more time in instruction.

The figures for the number of credits enrolled-in per student registered were found to be approximately 22 and 33 for Grades 12 and 11, respectively. At the Grade 10 level if one excluded the 10-49 enrollment category the figure 42 could be considered an approximation for the remaining three categories. In the 10-49 category at the Grade 10 level 37.6 was found to be the average number of credits enrolled-in per student registered. From these figures it appears that many Grade 12 students either take Grade 11 and Grade 10 courses while in Grade 12 or they complete Grade 12 in two years. The figure of 42 for Grade 10 indicates, likewise, that considerable Grade 11 and

Grade 12 students enroll in Grade 10 courses.

The median credit offerings as found in this study are 199, 145, 130 and 92 credits in schools having enrollments of 150+, 100-150, 50-99 and 10-49, respectively. The generally-held belief that schools having small enrollments offer a very limited program is verified by these findings. The findings of this study are in close agreement with those of Downey[3] who reported credit offerings of 97 and 136 in schools falling in enrollment categories of 1-39 and 40-99, respective -ly.

In applying or comparing findings of this study one must keep in mind that the sample consisted of public secondary schools in counties and school divisions in Alberta. There is reason to believe that practices in larger urban centres may differ quite markedly.

II. CONCLUSIONS

Class sizes

Class sizes in public secondary schools in school divisions and counties in Alberta vary quite widely. Larger class sizes are associated with schools having larger enrollments. The average class sizes were found to be 23.5, 20.0, 17.2 and 12.9 for schools in enrollment categories of 150+, 100-150, 50-99 and 10-49,respectively. Class sizes decrease generally from Grades 10 to 12. Class sizes are

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[3]Downey, L. W., The Small High School in Alberta. The Alberta School Trustees' Association, Edmonton, 1965, p. 37.

larger in the Eng-Fr-SS area than in the Math-Sc and Others subject area classifications.

Instruction time per teacher

The median instruction time per teacher was found to be 22 hours per week. A comparison by enrollment categories indicates that teachers in the lowest enrollment category (10-49) generally spend most time in instruction while those in the 100-150 category spend least time in instruction. Teachers in the largest enrollment category are seen to be specialized in subject areas to a greater extent than teachers in any of the other three categories.

Teacher output

Average teacher outputs decrease quite considerably with decreases in enrollments of schools. Average teacher outputs of 517, 420, 378.4 and 300.6 pupil-hours for teachers in schools in enrollment categories of 150+, 100-150, 50-99 and 10-49, respectively, show the decrease in outputs. This measure of teacher output is a quantitative one; it is not intended to measure the quality of the instruction. The decrease in teacher output with decreases in enrollments of schools is largely a result of decreases in class sizes. Thus, the feature of smallness appears to relate directly to instruction costs per pupil and perhaps to the over-all nature of the teaching tasks in schools having small enrollments. Because of differences in instruction loads, in class sizes and in credit offerings the tasks of teachers in small schools appear to differ from those of

teachers in larger schools.

Credits enrolled-in per student registered

The progressive decrease in number of credits enrolled-in per student registered in the grades from 10 to 12 suggests that the practice of students taking courses which are below the grade level at which they are registered is fairly prevalent. The number of credits enrolled-in per student registered drops from the low 40's through 33 to 22 for Grades 10, 11 and 12, respectively. The progressive decrease may at the same time reflect the more restricted programs provided at the Grade 11 and 12 levels.

Number of credits offered

The number of credits offered by schools generally decreases with decreases in school enrollments. The decrease is of significant magnitude and reaches crucial proportions when in enrollment category 10-49 the program is curtailed to the point where in a majority of the schools a complete high school program is not available.

III. IMPLICATIONS

1. Principals and other administrators, particularly ones associated with small secondary schools, should aim to balance teaching loads within schools and between schools and aim for most appropriate teaching loads for their teachers. The findings regarding teacher output and instruction-time per teacher may serve as guides.

2. Pupil achievement is generally considered lower in small schools. If this is so, it may very well be that the feature of small classes alone may interfere with proper teaching and learning.

3. The decrease in class sizes from Grade 10 to Grade 12 may not be desirable or advantageous. The question remains, particularly with reference to large schools which can prevent this decrease, as to whether the practice of smaller classes in the higher grades has any rational base or whether it is merely based on tradition.

4. The over-all nature of the teaching task in a small secondary school differs in many respects from that of teachers who perform in larger schools. This study indicates that rather basic differences are found with respect to class sizes, instruction loads and course offerings.

5. The lower teacher outputs in schools of lower enrollments may result in markedly higher costs of instruction per pupil in such schools.

6. Because class sizes decrease with higher grades the cost of instruction per pupil in small schools in Grades 12, or in Grades 11 and 12, may be prohibitive in some instances in view of the rather extremely low teacher outputs. Consideration should, in certain possible cases, be given to restricting small schools to offering only a partial secondary school program. Small schools could be limited to offering only Grade 10 or Grades 10 and 11. Centralization of secondary schools need not be looked upon as an all-or-none

situation. A compromise of this nature may prove justifiable from an economic consideration as well as from the desire to improve and equalize educational opportunity. This implication is based on the assumption that some small secondary schools are with us to stay for a considerable period of time yet.

IV. SUGGESTIONS FOR FURTHER STUDIES

1. A study of the relationship, if any, between the quantitative and qualitative aspects of teacher output. Such a study could be concerned with measuring the qualitative aspects of teacher output under varying conditions of class size and teacher load.

2. An investigation of behavioral approaches of teachers under conditions of different instruction loads and class sizes. Do teachers, for example, do different amounts of preparation? Do they display different amounts of enthusiasm and inspiration?

3. A survey of teachers who had experience in both small and large schools aimed at isolating features which teachers feel are advantages in each type of school.

4. A survey of teachers as to class sizes that are found to be most appropriate for optimum attainment of educational goals. Such a study might provide information as to whether most desirable class sizes vary with subjects taught and with grade levels. It may also point out whether there is a minimum class size below which teaching and learning may be interfered with.

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APPENDIX A

LIST OF SECONDARY SCHOOLS INCLUDED IN THE SAMPLE

Name	Division or County	Enrollment	Enrollment Category 10-49	50-99	100-150	150+
Acme	Three Hills	53		X		
Beaupre	Lac Ste. Anne	86		X		
Bentley	Lacombe	106			X	
Bluffton	Ponoka	31	X			
Camilla	Sturgeon	67		X		
Carbon	Three Hills	76		X		
Chipman	Lamont	17	X			
Coaldale	Lethbridge	253				X
Crestomere	Ponoka	38	X			
Eckville	Lacombe	75		X		
Elk Point	St. Paul	127			X	
Fort Saskatchewan	Strathcona	236				X
Glenwood	Cardston	37	X			
Hay Lakes	Camrose	67		X		
Hill City	Cardston	33	X			
Hines Creek	Fairview	43	X			
Hythe	Grande Prairie	101			X	
Kinuso	High Prairie	64		X		
Lacombe	Lacombe	304				X
Langlois	High Prairie	49	X			
Leduc	Leduc	197				X
Legal	Sturgeon	70		X		
Linden	Three Hills	43	X			
Mirror	Lacombe	60		X		
New Norway	Camrose	73		X		
Olds	Mountain View	217				X
Peace River	Peace River	170				X
Rich Lake	Lac La Biche	11	X			
Rosemary	Newell	58		X		
Sangudo	Lac Ste. Anne	105			X	
Schuler	Medicine Hat	36	X			
Seven Persons	Medicine Hat	22	X			
Slave Lake	High Prairie	33	X			
Spedden	Smoky Lake	23	X			
Standard	Wheatland	57		X		
Torrington	Three Hills	47	X			
Two Hills	Two Hills	117			X	
Veteran	Neutral Hills	31	X			
Vilna	Smoky Lake	85		X		
Warburg	Leduc	81		X		
Wembley	Grande Prairie	60		X		
Wrentham	Warner	27	X			
	TOTALS		16	15	5	6

APPENDIX B

Form A 1962-63

SCHOOL REGISTRATION FORM

SECTION I

GENERAL INFORMATION

(For Dept. use only)

IT IS MOST URGENT THAT principals of schools and teachers of one-room schools complete this form (in quadruplicate) and send three copies, together with two copies of the timetable, to the Inspector concerned prior to September 15.

School in ..... School District No. .....

..... School Division or County No. .....

Principal

Address of Principal

Secretary of School Division

Address of Secretary of School Division

Secretary of School District (if not Divisional)

Address of Secretary of School District

Junior High School Inspector

Senior High School Inspector

SPECIAL CIRCUMSTANCES

The space below may be used to record any special circumstances relating to the organization of your school, combining of classes, cycling, shop - home economics circuits, school bands, et cetera.

This Space for Superintendents and Inspectors

Junior High School Program — Senior High School Program

Approved by:

Local Superintendent

OR

Department Superintendent

High School Inspector

one or more subjects of Grades VII - XII. Some of the teachers may be regularly employed in grades below the seventh but teach one or more subjects in Grades VII - XII. Include the names of any special or part-time teachers or supervisors who give class instruction in Grades VII - XII.

(2) List all Junior and Senior High School subjects taught by each teacher. If more than one class of a course is taught [illegible] brackets [illegible] Lit. 10 (3)

(3) [illegible] of all changes in th

	1. NAME OF TEACHER Please state full name. (Members of religious orders kindly state both family and religious names).	2. Degree(s) Obtained When and Where	3. Highest Alberta Certificate held Standard E Professional etc.	4. State Interim or Permanent	5. LIST ALL SUBJECTS TAUGHT (Include Counselling)	Teaching Load 6. Junior High Periods per week	7. Senior H.S. Credits	8. Senior H.S. Periods per week
1.	Principal							
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								

If additional space is needed please continue the list on the reverse side of SECTION III.

JUNIOR HIGH AND HIGH SCHOOL ORGANIZATION — 1962-63

School in _____

S.D. Number _____

Division or Country _____

No. _____

INSTRUCTIONS

(1) Underline the subjects in the four-column list to the right (Grades VII-XII) that are to be taught in your school during the year 1962-63.

(2) Column 1—Indicate the credit values of all courses. In every case where credit values are variable, the credit value that applies in your school must be circled.
Column 2—Referring to each teacher by number (as listed in SECTION II) write in the space provided (Column 2) the number corresponding to the name of the teacher who is to teach that subject during the year 1962-63.
Column 3—Indicate enrolment in each course offered.

ORGANIZATION OF SCHOOL BY GRADES IN ROOMS _____

Total No. Home Rooms _____

ENROLMENT BY GRADES—

DIVISION I			
I	II	III	TOTAL

DIVISION II			
IV	V	VI	TOTAL

JUNIOR HIGH			
VII	VIII	IX	TOTAL

HIGH SCHOOL			
X	XI	XII	TOTAL

SCHOOL TOTAL	

All High Schools in the Province are classified as standard instruction-time high schools or as small high schools (see Senior High School Handbook, 1962-63, Pages 12 and 41) [illegible] the category below which describes your school.

1 1a 1b 2a 2b 3a Standard

Total High School Credits offered at school _____

Net minutes of instruction per week given at above school for a 5-credit subject _____
(Courses of other credit ratings must be scheduled on a proportional time basis.)

JUNIOR HIGH SCHOOL	2	3
GRADE VII Compulsory Subjects	Teacher No.	Enrolment
Literature		
Language		
Social Studies		
Health		
Physical Education		
Mathematics		
General Science		
Exploratory Subjects		
Art		
Com'nity Econom.		
Dramatics		
Guidance		
Home Economics		
Industrial Arts		
Music		
Oral French		
GRADE VIII		
Compulsory Subjects		
Literature		
Language		
Social Studies		
Health		
Physical Education		
Mathematics		
General Science		
Exploratory Subjects		
Art		
Com'nity Econom.		
Dramatics		
Guidance		
Home Economics		
Industrial Arts		
Music		
Oral French		
GRADE IX		
Compulsory Subjects		
Literature		
Language		
Social Studies		
Health		
Guidance		
Physical Education		
Mathematics		
Science		
Exploratory Subjects		
Art		
Com'nity Econom.		
Dramatics		
Guidance		
Home Economics		
Industrial Arts		
Music		
Oral French		

GRADE X	1	2	3
Constants	Gr.	Teacher No.	Enrolment
Literature 10	3		
Language 10	5		
Social Stud. 1	5		
Physical Ed. 10	2-3-4-5		
Electives			
Mathematics 10	5		
Mathematics 11	5		
Mathematics 12	5		
Science 10	5		
Biology 11	3-4		
Science 12**	5		
Latin 10	5		
French 10	5		
German 10	5		
Rec'keeping 10	2-3-4		
Shorthand 10	5		
Typewriting 10	3 or 5		
Bus. Fund. 10	2-3-4		
Woodwork 10	4-5		
Metalwork 10	4-5		
Electricity 10	4-5		
Automotives 10	4-5		
Printing 10	4-5		
Arts, Crafts 10	4-5		
Fab. Dress 10	4-5		
Foods & Nt. 10	4-5		
Home Eco. 10	4-5		
Needlework 10	2		
Agriculture 10	4-5		
Music 10	3-4-5		
Art 10	3-4-5		
Dramatics 10	3-4-5		
Hlth. P.D. 10	2-3-4-5		
Drafting 10	3 or 5		
Gen. Mech. 15	4-5		
Gen. Mech. 16	4-5		
Gen. Mech. 17	4-5		

GRADE XI	1	2	3
Constants	Gr.	Teacher No.	Enrolment
Literature 20	5		
Language 20	5		
Social Studies 20	5		
Electives			
Phys. Ed. 20	2-3-4-5		
Physical Ed. 10a‡	2-3		
Mathematics 20	5		
Mathematics 21	5		
Mathematics 22	5		
Science 20	5		
Biology 20	5		
Latin 20*	5		
French 20	5		
German 20*	5		
Ukrainian 20	5		
Bookkeeping 20	5		
Shorthand 20	5		
Typewriting 20	5		
Office Prac. 20‡	5		
Clerical Prac. 20	5		
Merch'd'g 20	5		
Woodwork 20	8 or 10		
Woodwork 21	4-5		
Metalwork 20	8 or 10		
Electricity 20	8 or 10		
Automotives 20	8 or 10		
Printing 20	8 or 10		
Arts & Crafts 20	8 or 10		
Fab. & Dress. 20	4-5		
Foods & Nut. 20	4-5		
Home Eco. 20	4-5		
Agriculture 20	8 or 10		
Agriculture 21	4-5		
Music 20	3-4-5		
Art 20	4-5		
Dramatics 20	4-5		
Eng. Lit. 21	3-4-5		
Eng. Lang. 21	4-5		
Geography 20	3 or 5		
Law 20	3		
Sociology 20	3-4		
Psychology 20	3-4		
Drafting 20	3 or 5		

GRADE XII	1	2	3
Constants	Credits	Teacher No.	Enrolment
Studies 30			
Electives			
Mathematics 30	5		
Mathematics 31‡	5		
Mathematics 32	5		
Chemistry 30	5		
Physics 30‡	5		
Biology 30	5		
Latin 30	5		
French 30	5		
German 30	5		
Ukrainian 30	5		
French 31‡	5		
Accounting 30	5		
Secretarial Training 30‡	5		
Typewriting 30	5		
Office Practice 30	3 or 5		
Business Machines 30	5		
Woodwork 30	10 or 15		
Metalwork 30	10 or 15		
Electricity 30	10 or 15		
Automotives 30	10 or 15		
Arts & Crafts 30	10		
Fabrics & Dress. 30	4-5		
Foods & Nutrition 30	4-5		
Agriculture 30	10 or 15		
Music 30	5		
Art 30	5		
Dramatics 30	5		

‡ For prerequisites, see Senior High School Handbook.

* No prerequisites in 1962-63.

** Science 12 is not to be taken after nor concurrent Science 10.

Please enter in appropriate spaces above any special co[illegible] that is offered in your school.

Place X in upper column

APPENDIX C

An example of the source of data and computation of values for one school in the sample.

(i) Form A School Registration Form.

(ii) Information Sheet.

(iii) Calculation Sheets.

(iv) Data Sheet.

regularly employed in grades below the seventh but teach one or more subjects in Grades VII - XII Include the names of any special or part-time teachers or supervisors who give class instruction in Grades VII - XII

(2) List all Junior and Senior High School subjects taught by each teacher. If more than one class of a course is taught indicate by a number in brackets thus Lit 10 (3)

(3) [illegible]

1. NAME OF TEACHER Please state full name. (Members of religious orders kindly state both family and religious names).	2. Degree(s) Obtained When and Where	3. Highest Alberta Certificate held Standard E Professional etc.	4. State Interim or Permanent	5. LIST ALL SUBJECTS TAUGHT (Include Counselling)	Teaching Load 6. Junior H.S. Periods per week	7. Senior H.S. Credits	8. Senior H.S. Periods per week
Principal Huntrods, Joseph E. Harold	B.Sc. Arts U of A '42	First	Perm	Typing 10, Math 10(2), Bus.Fund.10, Math. 31, Phys.30		26	27
Blakie, Alvin Fredric	B.Ed. UofA'54	Prof	Perm	Language 10, Soc.St. 20(3), Law 20, Socialogy 20		26	26
Paetkau, David Henry	B.Ed. UofS'52	Prof	Perm	Lang.10, German 10, German 20, German 30, Math. 21, Chemistry 30(2)		35	34
Baldwin, Donald Reginald	B.Ed. UofA'48	H.S.	Perm	Math.20(2), Typing 20, Soc.St. 30(2), Math.30(2) Economics 30.		39	38
Solberg, Sverre John	B.Ed. UofA'45 B.A. UofA'47	H.S.	Perm	Lit.20,Lang.20, Science 20, Biology 20, Social.20 Biology 32(2)		31	30
Bryant, Charles Woodbury	B.A. UBC '48 B.Ed.U ofA'49	Prof	Perm	Lang. 10, Soc.St.10(3), Lang.20, Lit.20(2), Phys.Ed.10		33	33
Maier, Cilda Kathleen Madge	B.Ed. UofA'55	Prof	Perm	Lit. 10, French 10(2), French 20, French 30, Eng.30(2)		33	32
Gregorash, Eugene Oleh	B.Ed. UofA'51	Prof	Perm	Science 10(2), Science 12, Record Kp. 10, Lang. 20, Science 20, Biology 20,		32	33
Regier, Esther Helen		St.S.	Int.	Lit. 10(2), Lang. 10, Typing 10, Record Kp. 10, Shorthand 10, Phys. Ed. 10, Math. 11.		31	32
Whaley, Ruth Gertrude	B.H.Ec.UofA'46	Prof	Perm	Fab.&Dress 10(2), Fab.&Dress 20, Foods & Nutr. 10, Home Ec.10		20	20
Sterenberg, Tom		St.S.	~~Int.~~ Perm	Woodwork 10(3), Automotives 10(2), Automotives 21		24	24

If additional space is needed please continue the list on the reverse side of SECTION III.

SUBJECTS TAUGHT
SECTION III

[illegible] ORGANIZATION 196[illegible]

Kate Andrews High
Coaldale Cons. 7
Lethbridge

No. 7

INSTRUCTIONS

[illegible] 1962-63.

3 - 10's
3 - 11's
3 - 12's

Total No. Home Rooms 9

ENROLMENT BY GRADES—

DIVISION I			
I	II	III	TOTAL

DIVISION II			
IV	V	VI	TOTAL

JUNIOR HIGH			
VII	VIII	IX	TOTAL

HIGH SCHOOL			
X	XI	XII	TOTAL
100	79	74	253

SCHOOL TOTAL 253

All High Schools in the Province are classified as standard instruction-time high schools or as small high schools (see Senior High School Handbook, 1962-63, Pages 12 and 41). Please circle the category below which describes your school.

1 1a 1b 2a 2b 3a [✓ Standard]

Total High School Credits offered at school 192

Net minutes of instruction time week given at above school for a 5-credit subject 200

(Courses of other credit ratings must be scheduled on a proportional time basis.)

JUNIOR HIGH SCHOOL

1	2	3
GRADE VII Compulsory Subjects	Teacher No.	Enrolment
GRADE VIII Compulsory Subjects		
Social Studies		
Health		
Physical Education		
General Science		
Exploratory Subjects		
Art		
Community Econom.		
Drama		
Guidance		
Home Economics		
Industrial Arts		
Music		
Oral French		
GRADE IX Compulsory Subjects		
Physical Education		
Mathematics		
Exploratory Subjects		
Art		
Community Econom.		
Home Economics		
Industrial Arts		
Music		
Oral French		

GRADE X

Constants	1 Gr.	2 Teacher No.	3 Enrolment
[illegible]	5	7-9	103
[illegible]	5	2-3-6-9	107
Social Studies 10	5	6	108
Physical Ed. 10	②-3-4-5	6-9	48
Electives			
Mathematics 10	5	1	87
Mathematics 11	5	9	25
Mathematics 12	5		
Science 10	5	8	87
Biology 11	3-4		
Science 12**	5	8	23
Latin 10	5		
French 10	5	7	68
German 10	5	3	41
Bookkeeping 10	2-③-4	8-9	61
Shorthand 10	5	9	25
Typewriting 10	③ or ⑤	1-9	65
Bus. Fund. 10	2-③-4	1	26
Woodwork 10	④-5	11	51
Metalwork 10	4-5		
Electricity 10	4-5		
Automotives 10	④-5	11	21
Printing 10	4-5		
Arts, Crafts 10	4-5		
Fab. Dress 10	④-5	10	25
Foods & Nt. 10	④-5	10	16
Home Eco. 10	④-5	10	15
Needlework 10	3		
Agriculture 10	4-5		
Music 10	3-4-5		
Art 10	3-4-5		
Dramatics 10	3-4-5		
Hlth. P.D. 10	2-3-4-5		
Drafting 10	3 or 5		
Gen. Mech. 15	4-5		
Gen. Mech. 16	4-5		
Gen. Mech. 17	4-5		

GRADE XI

Constants	1 Gr.	2 Teacher No.	3 Enrolment
Literature 20	5	5-6	85
[illegible] 20		5-6-8	83
Social Studies 20	5	2	74
Electives			
Phys. Ed. 20	2-3-4-5		
Physical Ed. 10a‡	2-3		
Mathematics 20	5	4	49
Mathematics 21	5	3	30
Mathematics 22	5		
Science 20	5	5-8	56
Biology 20	5	5-8	55
Latin 20*	5		
French 20	5	7	41
German 20*	5	3	15
Ukrainian 20	5		
Bookkeeping 20	5		
Shorthand 20	5		
Typewriting 20	5	4	14
Office Prac. 20‡	5		
Clerical Prac. 20	5		
Merch'd'g 20	5		
Woodwork 20	8 or 10		
Woodwork 21	4-5		
Metalwork 20	8 or 10		
Electricity 20	8 or 10		
Automotives 20	8 or 10		
Printing 20	8 or 10		
Arts & Crafts 20	8 or 10		
Fab. & Dress. 20	④-5	10	9
Foods & Nut. 20	4-5		
Home Eco. 20	4-5		
Automotives 21	④	11	5
Agriculture 20	8 or 10		
Agriculture 21	4-5		
Music 20	3-4-5		
Art 20	4-5		
Dramatics 20	4-5		
Eng. Lit. 21	3-4-5		
Eng. Lang. 21	4-5		
Geography 20	3 or 5		
Law 20	3	2	15
Psychology 20	3-4		
Sociology 20	③-4	2-5	54
Drafting 20	3 or 5		

GRADE XII

Constants	1 Credits	2 Teacher No.	Enrolment
English 30	5	7	5
Social Studies 30	5	4	7
Electives			
Mathematics 30	5	4	4
Mathematics 31‡	5	1	1
Mathematics 32	5		
Chemistry 30	5	3	3
Physics 30‡	5	1	1
Biology 32	5	5	3
Latin 30	5		
French 30	5	7	2
German 30	5	3	2
Ukrainian 30	5		
French 31‡	5		
Accounting 30	5		
Secretarial Training 30‡	5		
Typewriting 30	5		
Office Practice 30	3 or 5		
Business Machines 30	5		
Woodwork 30	10 or 15		
Metalwork 30	10 or 15		
Electricity 30	10 or 15		
Automotives 30	10 or 15		
Arts & Crafts 30	10		
Fabrics & Dress. 30	4-5		
Foods & Nutrition 30	4-5		
Agriculture 30	10 or 15		
Economics 30	4	4	16
Music 30	5		
Art 30	5		
Dramatics 30	5		

30

‡ For prerequisites, see Senior High School Handb

* No prerequisites in 1962-63.

** Science 12 is not to be taken after nor con
Science 10.

Please enter in appropriate spaces above any spec
listed that is offered in your school.

INFORMATION FROM SCHOOL REGISTRATION FORM - FORM A 1962-63

NAME OF SCHOOL Kate Andrews

NAME OF SCHOOL DIVISION OR COUNTY Lethbridge

ENROLLMENT: Gr. 10 100, Gr. 11 79, Gr. 12 74, TOTAL 253

FROM SECTION III - COURSES TAUGHT

GRADE 10					GRADE 11				
Course	Credit Value	Teacher Number	Enroll-ment	Credits* Instr'n	Course	Credit Value	Teacher Number	Enroll-ment	Credits* Instr'n
Lit. 10	3	7,9	103	9	Lit. 20	5	5,6	85	9
Lang. 10	5	2,3,6,9	107	20	Lang. 20	5	5,6,8	83	15
S.S. 10	5	6	108	15	S.S. 20	5	2	74	15
Fr. 10	5	7	68	10	Fr. 20	5	7	41	5
Math. 10	5	1	87	10	Germ. 20	5	3	15	5
Math. 11	5	9	25	5	Math. 20	5	4	49	10
Sc. 10	5	8	87	10	Math. 21	5	3	30	5
Sc. 12	5	8	23	5	Sc. 20	5	5,8	56	10
Germ. 10	5	3	41	5	Biol. 20	5	5,8	55	10
Typ. 10	3-5	1,9	65	8					
P.E. 10	2	6,9	98	4	Typ. 20	5	4	14	5
Beckpg 10	3	8,9	61	6	Bkkg. 20	5			
Shthand 10	5	9	25	5	Law 20	3	2	15	3
Bus. Fund 10	3	1	26	3	Soc. 20	3	2,5	54	6
Wdwk 10	4	11	51	12	Fab&Dress 20	4	10	9	4
Auto. 10	4	11	21	8	Auto. 21	4	11	5	4
FabDress 10	4	10	25	8					
FoodsNut 10	4	10	16	4					
H.Ec. 10	4	10	15	4					

GRADE 12				
Course	Credit Value	Teacher Number	Enroll-ment	Credits* Instr'n
Eng. 30	5	7	55	10
S.S. 30	5	4	70	10
Fr. 30	5	7	27	5
Germ. 30	5	3	23	5
Math. 30	5	4	45	10
Chem. 30	5	3	39	10
Biol. 32	5	5	36	10
Math 31	5	1	14	5
Physics 30	5	1	17	5
Econ. 30	4	4	16	4

FROM SECTION II - TEACHERS

Teacher Number	Hours, Instruction Sr. High	Jr. High	Subject# Specialty
1	17 1/3		
2	17 1/3		
3	23 1/3		Others
4	26		Others
5	20 2/3		Others
6	22		Eng-Fr-S.S.
7	22		Eng-Fr-S.S.
8	22		Math-Sc
9	20 2/3		Others
10	13 1/3		
11	16		

*Credits of instruction provided in each course computed from information in Section III and Section II.

#Arrived at by examining each teacher's load.

CALCULATION SHEET - For Kate Andrews High School

4. Average Class Size

GRADE	SUBJECT AREA	COURSE	CREDIT VALUE	ENROLL-MENT	PUPIL-CREDITS	CREDITS INSTR'N	AVE. CLASS SIZE
10	ENG-FR-SS	Lit. 10	3	103	309	9	
		Lang. 10	5	107	535	20	
		S.S. 10	5	108	540	15	
		Fr. 10	5	68	340	10	
		Germ. 10	5	41	205	5	
					1,929	59	32.8
	MATH-SC	Math. 10	5	87	435	10	
		Math. 11	5	25	125	5	
		Sc. 10	5	87	435	10	
		Sc. 12	5	23	115	5	
					1,110	30	37.0
	OTHERS	Typ. 10	3-5	65	260	8	
		P.E. 10	2	98	196	4	
		Reckpg. 10	3	61	183	6	
		Shthand. 10	5	25	125	5	
		Bus. Fund. 10	3	26	78	3	
					842	26	32.4
	ALL				3,881	115	33.7
	H. Ec. & Ind. Arts	Wdwk. 10	4	51	204	12	
		Auto 10	4	21	84	8	
		Fab. & Dr. 10	4	25	100	8	
		Food & Nut. 10	4	16	64	4	
		H. Ec. 10	4	15	60	4	
					512	36	14.2
11	ENG-FR-SS	Lit. 20	3	85	255	9	
		Lang. 20	5	83	415	15	
		S.S. 20	5	74	370	15	
		Fr. 20	5	41	205	5	
		Germ. 20	5	15	75	5	
					1,320	49	27.0
	MATH-SC	Math. 20	5	49	245	10	
		Math. 21	5	30	150	5	
		Sc. 20	5	56	280	10	
		Biol. 20	5	55	275	10	
					950	35	27.0
	OTHERS	Typ. 20	5	14	70	5	
		Law 20	3	15	45	3	
		Soc. 20	3	54	162	6	
					277	14	19.8
	ALL				2,547	98	26.0

CALCULATION SHEET (cont'd)

GRADE	SUBJECT AREA	COURSE	CREDIT VALUE	ENROLL -MENT	PUPIL-CREDITS	CREDITS INSTR'N	AV.CLASS SIZE
11	H. Ec.	Fab. & Dr. 20	4	9	36	4	
	&	Auto 21	4	5	20	4	
	Ind. Arts				56	8	7.0
12	ENG-FR-SS	Eng. 30	5	55	275	10	
		S.S. 30	5	70	350	10	
		Fr. 30	5	27	135	5	
		Germ. 30	5	23	115	5	
					875	30	29.2
	MATH-SC	Math. 30	5	45	225	10	
		Chem. 30	5	39	195	10	
		Biol. 30	5	36	180	10	
		Math. 31	5	14	70	5	
		Phys. 30	5	17	85	5	
					755	40	18.9
	OTHERS	Econ. 30	4	16	64	4	16.0
	ALL				1,694	74	22.9

5. Average number of credits enrolled-in per student

a) in Gr. 10 = 4,393/100 = 43.9

b) in Gr. 11 = 2,603/ 79 = 33.0

c) in Gr. 12 = 1,694/ 74 = 23.0

d) in Gr. 10-12 = 8,690/253 = 34.3

Average number of credits enrolled-in per student registered in each of the grades is arrived at by dividing the total number of credits enrolled-in in courses at that grade level by the enrollment in that same grade. (e.g. pupil -credits/enrollment)

DATA SHEET

1. NAME OF THE SCHOOL Kate Andrews

2. NAME OF SCHOOL DIVISION OR COUNTY Lethbridge

3. ENROLLMENT: Gr. 10 100, Gr. 11 79, Gr 12 74, Total 253

4. AVERAGE CLASS SIZE (= $\frac{\text{pupil-credits}}{\text{credits of instruction}}$)

GRADE	SUBJECT AREA CLASSIFICATION				IND. ARTS & HOME EC.
	ENG-FR-SS	MATH-SC	OTHERS	ALL*	
10	32.8	37.0	32.4	33.7	14.2
11	27.0	27.0	19.8	26.0	7.0
12	29.2	18.9	16.0	22.9	
10, 11 & 12	29.9	26.8	27.0	28.3	12.9

*Excluding Home Economics and Industrial Arts courses.

5. AVERAGE NUMBER OF CREDITS ENROLLED-IN PER STUDENT

a) in Gr. 10 = ____/____ = 43.9

b) in Gr. 11 = ____//____ = 33.0

c) in Gr. 12 = ____/____ = 23.0

d) in Gr. 10-12= ____/____ = 34.3

6. NUMBER OF CREDITS OFFERED

a) in Gr. 10 = 79

b) in Gr. 11 = 62

c) in Gr. 12 = 49

d) in Gr. 10-12 = 190

7. TEACHING LOADS OF TEACHERS BY AREAS OF SPECIALIZATION

HOURS OF INSTRUCTION/WK.	SUBJECT AREA CLASSIFICATION			TOTAL
	ENG-FR-SS	MATH-SC	OTHER	
18				
18 2/3				
19 1/3				
20				
20 2/3			2	2
21 1/3				
22	2	1		3
22 2/3				
23 1/3			1	1
24				
24 2/3				
25 1/3				
26			1	1
26 2/3				
TOTAL	2	1	4	7

DATA SHEET

1. NAME OF THE SCHOOL Kate Andrews

2. NAME OF SCHOOL DIVISION OR COUNTY Lethbridge

3. ENROLLMENT: Gr. 10 100, Gr. 11 79, Gr 12 74, Total 253

4. AVERAGE CLASS SIZE (= $\frac{\text{Credit-credits}}{\text{credits of instruction}}$)

GRADE	SUBJECT AREA CLASSIFICATION				IND. ARTS & HOME EC.
	ENG-EN-SS	MATH-SC	OTHER	ALL*	
10	32.8	37.0	32.4	33.7	14.2
11	27.0	27.0	19.8	26.0	7.0
12	29.2	18.9	16.0	22.9	
10, 11 & 12	29.9	26.8	27.0	28.3	12.9

*Excluding Home Economics and Industrial Arts courses.

5. AVERAGE NUMBER OF CREDITS ENROLLED-IN PER STUDENT

a) in Gr. 10 = 43.9

b) in Gr. 11 = 33.0

c) in Gr. 12 = 29.0

d) in Gr. 10-12 = 34.3

6. NUMBER OF CREDITS OFFERED

a) in Gr. 10 = 79

b) in Gr. 11 = 82

c) in Gr. 12 = 49

d) in Gr. 10-12 = 180

7. TEACHING LOADS OF TEACHERS BY AREAS OF SPECIALIZATION

HOURS OF INSTRUCTION/WK.	SUBJECT AREA CLASSIFICATION			TOTAL
	ENG-EN-SS	MATH-SC	OTHER	
18				
18 2/3				
19 1/3				
20				
20 2/3			2	2
21 1/3				
22	2	1		3
22 2/3				
23 1/3			1	1
24				
24 2/3				
25 1/3				
26			1	1
26 2/3				
TOTAL	2	1	4	7